PCN93
A COST EFFECTIVENESS ANALYSIS OF 4 CHEMOTHERAPY REGIMENS IN THE TREATMENT OF PLATINUM SENSITIVE RECURRENT EPITHELIAL OVARIAN CARCINOMA

Burbano-Levy X[1], Schroeder ED[2], Diaz JP[2]
[1]Zilonis Health, Boca Raton, FL, [2]University of Miami, Miami, FL, USA

OBJECTIVES: Compare the cost effectiveness of 4 chemotherapy treatments for platinum-sensitive recurrent epithelial ovarian carcinoma (EOC). **METHODS:** A Markov model was constructed using a hypothetical cohort of 500 women (median age 60) to compare 4 NCCN recommended treatment-regimens for platinum sensitive recurrent EOC: carboplatin/paclitaxel (C/P); carboplatin/gemcitabine (C/G), C/G with bevacizumab (C/G+B); and carboplatin/pegylated liposomal doxorubicin (C/PLD). These treatments were chosen as they are each supported by phase III trials. An indirect treatment comparison methodology was used to obtain evidence of the difference in treatment effects of each regimen. Progression free survival (PFS) and overall survival (OS) data were used for survival comparisons. The time horizon was thirty years. Cost calculations were based on data from Medicare and published literature, and were based on median cycle number from each trial. Published values of health utilities were used for QALY calculations. Cost effectiveness ratios (CER) were calculated for each regimen, and expressed as 3 incremental cost effectiveness ratios (ICER): additional month PFS, month OS, and QALY. Reported rates of grade 3/4 toxicities from each trial were added to the cost of each treatment. Cost, survival, and toxicity rate were varied over a range for sensitivity analysis. **RESULTS:** C/G was a cost-effective regimen. The cost for treating 1 woman with 6 cycles of C/G ranged from $1,140 (no toxicity) to $7,030 (toxicities at the reported rate). Treatment with C/G produced a dominant ICER of $236,318/month-PFS. For each PFS-month gained over the next most cost-effective option, over $200,000 was saved. C/G was the dominant strategy for OS, (ICER=$72,213/month OS). When adjusted for health utility, C/G was the dominant strategy (ICER of $20,443/QALY). **CONCLUSIONS:** C/G was a cost-effective regimen, resulting in a dominant ICER for PFS, OS, and QALY. C/G resulted in a savings compared to the next most cost effective regimen.

PCN94
MOBILIZING AUTOLOGOUS HEMATOPOIETIC STEM CELLS IN PATIENTS WITH MYELOMA: A ECONOMIC COMPARISON OF 4 COMMON MOBILIZATION STRATEGIES

Tay J, Sheppard D, Bredeson C, Allan D, Coyle D
University of Ottawa, Ottawa, ON, Canada

OBJECTIVES: Autologous stem cell transplantation (ASCT) is an integral part in the management of Multiple Myeloma (MM), the 2nd most common blood cancer. The collection of self stem cells – mobilization is required for ASCT. The optimal approach to procurement of stem cells remains debatable, with multiple competing clinical, cost and transplant-centre factors. In order to rationalize a preferred collection strategy we sought to perform a cost-effectiveness analysis from a Funder's perspective of 4 common mobilization strategies used in Canada: Cyclophosphamide/G-CSF (Strategy 1), G-CSF alone (Strategy 2), Upfront-use of Plerixafor (Strategy 3), and "Just-in-time" use of Plerixafor (Strategy 4). **METHODS:** Clinical data was derived from published systematic reviews, randomized trials and observational studies. Further, a local audit was performed to evaluate external validity of the published data. Costing data for SC collection and adverse events were derived locally, The Ottawa Hospital. All unsuccessful 1st attempts with each strategy were assumed to be followed by plerixafor re-mobilization. Probabilistic sensitivity analysis around costs and collection probabilities were varied simultaneously across their plausible range of values using Monte Carlo simulations (MCS). **RESULTS:** Successful collection rates were 94.5%, 88.3%, 97.8% and 98.0% respectively for Strategies 1-4, with rates of adverse event of febrile neutropenia of 25.7%, 0%, 0% and 0%. Costs/patient were estimated as $8649, $9098, $17,309 and $13,119 respectively. Strategy 1 dominated strategy 2 in terms of cost and successful mobilization. The incremental cost per successful mobilization was $137,000 for strategy 4 vs. 1 and $1.6 million for strategy 4 vs. 3. MCS found that the probability that strategy 4 was most successful was 70.6%. Strategy 1 was least costly in 72.6% of simulations. **CONCLUSIONS:** Within the constraints of our model, our analyses suggest that Cyclophosphamide/G-CSF is a reasonable stem cell mobilization strategy in patients with myeloma requiring an ASCT, balancing costs and successful mobilization.

PCN95
BRAF TARGETED THERAPIES FOR THE TREATMENT OF METASTATIC MELANOMA: A COST-EFFECTIVENESS ANALYSIS

Shih V[1], ten Ham RMT[2], Bui CT[1], Tran DN[1], Wilson LS[3]
[1]University of California, San Francisco, San Francisco, CA, USA, [2]Utrecht University, Utrecht, The Netherlands, [3]University of California San Francisco, San Francisco, CA, USA

OBJECTIVES: Melanoma is one of the fastest growing cancers worldwide and prognosis is poor with metastases. In about 50% of melanoma patients the $BRAF^{V600}$ protein kinase mutation is present. Two $BRAF^{V600}$ targeted therapies dabrafenib (Tafinlar®) and vemurafenib (Zelboraf®), have recently received U.S. approval to treat metastatic melanoma in $BRAF^{V600}$patients. This study evaluated the cost-effectiveness of BRAF inhibitors compared to traditional chemotherapy (dacarbazine). **METHODS:** A Markov model was developed with three health states: stable disease, progression, and death and taking a lifetime societal perspective. Transition probabilities and clinical outcomes were derived from Phase III trials. Costs were in 2013 USD and derived from literature, national databases, and Medicare fees. Utilities for melanoma and other health states were obtained from studies conducted on the general public. Deterministic and probabilistic sensitivity analyses were run to test the impact of uncertainties. **RESULTS:** Cumulative cost of dacarbazine, dabrafenib and vemurafenib respectively were $15,282, $43,895, and $59,768. Monthly Drug costs were respectively $537, $7,570, and $10,807. Effectiveness of dacarbazine, vemurafenib and dabrafenib were 0.37, 0.5 and 0.52 LY, respectively and quality adjusted were 0.22, 0.35 and 0.39 QALY. The incremental cost-effectiveness ratio was $14,569 per QALY for dabrafenib compared to dacarbazine. Dabrafenib dominated vemurafenib. For sensitivity analysis, 95% of the variance was accounted for by health state utilities and cost of dabrafenib. **CONCLUSIONS:** Dabrafenib is the most cost-effective treatment for metastatic melanoma in patients with $BRAF^{V600}$ mutation given our assumptions. Given the similar QALYs and side effects profile of dabrafenib and vemurafenib, but higher drug cost of vemurafenib, a 25% price reduction for vemurafenib could bring this drug into the cost-effective range. A specific decrease of 63% in utility of progression on dabrafenib or a minimum decrease of 28% for utility of stable disease on dabrafenib is needed to make vemurafenib the most cost-effective option.

PCN96
COST-EFFECTIVENESS OF AFATINIB, ERLOTINIB, AND CISPLATIN/PEMETREXED FOR FIRST-LINE TREATMENT OF METASTATIC EGFR-MUTATION POSITIVE NON-SMALL CELL LUNG CANCER

Ting J[1], Ho T[1], Xiang P[1], Abdel-Sattar M[1], Sugay A[1], Wilson LS[2]
[1]University of California: San Francisco, San Francisco, CA, USA, [2]University of California San Francisco, San Francisco, CA, USA

OBJECTIVES: To evaluate the cost-effectiveness of afatinib, erlotinib, and cisplatin/pemetrexed chemotherapy, for first-line treatment of metastatic EGFR-mutation positive non-small cell lung cancer (NSCLC). **METHODS:** A Markov model simulated the lifetime progression of EGFR-mutation positive stage IIIB/IV NSCLC patients, under each treatment option, from a US societal perspective. Probabilities, survival rates and health utilities were obtained from clinical trials (LUX-3, LUX-6, EURTAC and OPTIMAL) and published literature. Progression-free and overall survival in the erlotinib trial were adjusted up to account for differences in poorer ECOG performance status compared to the afatinib trial. Costs included those for drugs, progression, and side effects in 2013 USD. Expected QALYS were calculated. The impact of varying parameters on model outcomes was examined using probabilistic sensitivity analyses. **RESULTS:** In the base-case model, treatment with afatinib was least expensive, with lifetime cost of $38,406, followed by cisplatin/pemetrexed ($40,714), and erlotinib ($41,344). Survival was highest with erlotinib (5.27 quality-adjusted life-months saved [QALMS]), followed by afatinib (4.02 QALMS), and cisplatin/pemetrexed (3.51 QALMS). Compared to erlotinib, afatinib had lower monthly drug costs ($5,648 versus $5,853), but higher overall side effects costs ($3,669 versus $1,690). Cisplatin/pemetrexed was dominated by afatinib. Erlotinib was cost-effective compared with afatinib (ICER=$28,210/QALYS). In a model without survival adjustments, afatinib compared with erlotinib had an ICER over the WTP threshold (ICER=$542,745/QALYS), with erlotinib remaining the cost-effective option. Afatinib becomes more cost-effective than erlotinib when its monthly drug cost decreased from $5,648 to below $3,802. **CONCLUSIONS:** Based on our analyses, we recommend erlotinib as the most cost-effective first-line treatment for EGFR-mutation positive NSCLC. Given the potentially similar relative efficacy between afatinib and erlotinib in the clinical trials, cost-effectiveness analysis of afatinib versus erlotinib depends mostly on differences in drug and side-effects costs. Thus, afatinib may need to earn its share of the NSCLC market space with more competitive pricing.

PCN97
COST-EFFECTIVENESS OF ARSENIC TRIOXIDE IN THE TREATMENT OF RELAPSED/REFRACTORY ACUTE PROMYELOCYTIC LYMPHOMA LEUKEMIA IN CANADA

Lachaine J[1], Mathurin K[1], Barakat S[2]
[1]University of Montreal, Montreal, QC, Canada, [2]Lundbeck Canada, Montreal, QC, Canada

OBJECTIVES: Acute promyelocytic leukemia (APL) constitutes a rare disease characterized by a high mortality rate at early stage of treatment. Current first-line treatments consist of all-trans retinoic acid (ATRA), anthracyclines and conventional chemotherapy (CT). Although APL has currently a good prognosis, 20 to 30% of patients who achieved remission still relapse and are further resistant to the treatment previously administrated. The objective of this study was to assess, from a Canadian perspective, the economic impact of arsenic trioxide (ATO) compared to ATRA+CT in the treatment of relapsed/refractory APL. **METHODS:** The cost-effectiveness of ATO compared to ATRA+CT in the treatment of relapsed/refractory APL was assessed over a lifetime horizon using a time-dependent Markov model. The model comprises five health states: induction, second remission, treatment failure or relapse, post-failure, and death. The length of each Markov cycle was one month for the first 24 months and one year thereafter. All patients started in the induction state and could move to other health states thereafter, according to the respective efficacy of each treatment. The model also takes into account the incidence of grade 3-4 adverse events reported in clinical trials. Utility or disutility values associated with each health state and adverse events were used to estimate the number of QALYs associated with each treatment. Analyses were conducted from both a Canadian Ministry of Health (MoH) and a societal perspective. **RESULTS:** Compared with ATRA+CT, ATO was associated with incremental cost-effectiveness ratios of $18,380/QALY from a MoH perspective and $20,156/QALY from a societal perspective. Results of the probabilistic sensitivity analysis indicated that ATO remains a cost-effective strategy in 99.96% and 92.45% of the simulations, from a MoH and a societal perspective respectively. **CONCLUSIONS:** This economic evaluation suggests that ATO is a cost-effective strategy compared to ATRA+CT in the treatment of relapsed/refractory APL in Canada.

PCN98
COST-EFFECTIVENESS ANALYSIS OF INNOVATION IN HEMATOLOGIC MALIGNANCIES

Lin PJ[1], Winn A[2], Parsons SK[1], Neumann PJ[1], Cohen JT[1]
[1]Tufts Medical Center, Boston, MA, USA, [2]University of North Carolina at Chapel Hill, Chapel Hill, NC, USA

OBJECTIVES: To examine the costs of hematologic malignancies (HMs) in relation to survival gains among Medicare beneficiaries. **METHODS:** Using the Surveillance, Epidemiology, and End Results (SEER)-Medicare datasets, we identified 99,721